RADON PROGRAM

1. **Purpose and Scope**:

The purpose of this chapter is to provide information on the Fort Campbell Radon Program.

2. **References**:

a. There are currently no Federal regulations relating to Radon in the home or workplace. However, EPA believes that indoor radon exposure levels greater than 200 pCi/L would require immediate mitigation actions. Additionally, based on currently available information, EPA believes that indoor radon concentrations can be reduced to 4 pCi/L in most homes.

b. AR 200-1, Chapter 11, Army Radon Reduction Program (ARRP). The Army has adopted the EPA action level of 4 pCi/L.

c. Fort Campbell Radon Management Plan

d. It is notable that individual states are passing laws requiring certifications and licenses for those in business of testing for radon and/or performing mitigation activities.

3. **Definitions**:

a. Alpha-track detector. A measuring device used to measure alpha particles emitted by the decay of radon and its decay products. These detectors are installed in indoor areas according to EPA guidance protocol and left for periods of up to 90 days for screening and 12 months for follow-up measurements.

b. pCi/L - picocurie per liter of air. A curie is a commonly used measurement of radioactivity and a picocurie is a very small amount of radiation equal to one trillionth of a curie.

4. **General**:

a. Radon is a colorless, odorless, and tasteless radioactive gas released by the natural degradation of uranium. Radon can be found in high concentrations in soils and rocks containing uranium, granite, slate, phosphate, and pitchblende. The only known health risk effect associated with exposure to elevated levels of radon is an increased risk of developing lung cancer. The risk of developing lung cancer from exposure to radon depends upon the concentration and duration of exposure. Current evidence also suggests that smokers are at a higher risk from radon exposure than nonsmokers.

b. Radon naturally occurs in outdoor air, with a typical average concentration of about 0.5 pCi/L. Although this level is not considered to be of concern, radon can concentrate inside enclosed spaces such as homes or buildings to levels exceeding several hundred pCi/L. Radon gas can enter typical buildings through dirt floors, cracks in concrete floors and walls, floor drains, sumps, joints, and tiny cracks or pores in hollow-block walls.

5. **Responsibilities**:

Although the EQO will probably not be directly involved, he or she can play an important role by cooperating with the deployment and retrieval of the radon testing equipment and with any coordination needed during mitigation.

6. **Instructions**:

a. The Department of the Army has chosen the Alpha-Track Detector to test for radon. This detector consists of a small strip of plastic which measures the number of alpha particles for a given location and area. The detectors do not emit any fumes or rays and are not hazardous.

b. When detectors are placed in a facility, they should not be covered, painted, or tampered with in any way. This will require placement of another detector which will delay test results.

c. The priorities established for radon testing at Fort Campbell are as follows:

Priority 1: All day care centers, hospitals, schools, living areas(family housing, BOQ/BEQ, and billets)

Priority 2: All structures that are not priority 1, but are occupied 24 hours per day (operations centers, training and research, development, and test and evaluation facilities)

Priority 3: All other installation structures that are routinely occupied(offices, work areas, and shops)

d. Initially a 90-day screening measurement will be made of all facilities on the installation. A 12-month long term measurement will be made based upon the results of the 90-day screening measurements.

e. At Fort Campbell, all priority 1 facilities are currently being tested, and fewer than 5 percent have radon concentrations greater than 4 pCi/L, which is the recommended EPA action level.

f. As indicated in the following table, the time allowed for completion of mitigation at a given facility varies with the radon concentration determined by testing.

7. **Additional Guidance**:

a. For additional guidance, information and answers to your questions, contact DPW Environmental Division, Compliance Branch, Russell Godsave, 798-9637 or Jerry Knickerbocker, 798-9597.

b. For future reference, place this document behind *Tab Number* 2 in your Fort Campbell Environmental Handbook.

MITIGATION TIME FRAMES

RADON CONCENTRATION pCi/L	MITIGATION REQUIRED WITHIN
4 or less*	No action required
4.1 to 8.0**	5 years
8.1 to 20.0**	1-4 years***
20.1 to 200*	6 months
Greater than 200*	1 month or move the occupants

* Determined by 90-day screening or a 1-year measurement in the case of Priority 2 and 3 structures.

** Determined by a 1-year measurement.

*** Depending on the level of measurement.